

## 68-20 Synopsis of Shade-Scanning Units (Project 02-21) (1/03)



Accurately selecting a shade is a critical step in the fabrication of any esthetic prosthodontic appliance. If an incorrect shade is chosen, the prosthesis must either be modified with colorants (i.e., stains) or remade. Current methods for selecting shades can be influenced by both objective and subjective variables that can greatly affect the quality of the final prosthesis. These variables include light source, surrounding environment, and the clinicians'/technicians' color perception. The light source and environment can easily be changed by using color-corrected lights and by using light, neutral background colors during shade selection. Human factors are more difficult to compensate for, as color perception differs due to age, eye fatigue, and neural-color receptors in the eye. To at least partially offset these variables, excellent communication must exist between the dentist and laboratory technician.

Digital shade-scanning technology is now available that is designed to eliminate subjective factors from shade selection. These digital devices use either a spectrophotometer, colorimeter, or a digital camera to obtain information for respective shade-scanning systems. Most of these systems work by using a hand-held device to scan an image of the patient's tooth and translate the information into either a tooth-shade map or a shade recommendation. Digital shade-scanning technology has been used for years by automotive manufacturers and body shops as well as paint supply stores. This technology has only been recently introduced to the dental market.






Included in this synopsis are five digital shade-scanning systems currently on the market. Four of the five use a hand-held device to scan the patient's tooth. The fifth system uses a digital picture taken with a camera. After the image is captured with a hand-held device or digital picture, shade information based on hue, value, and chroma is analyzed and then assigned to a current porcelain shade system. Depending on the shade-scanning system, this information is viewed either on the hand-held instrument, the system's base station, or on a computer. Most of the systems have the capability to upload the obtained shade information to a computer-based software program where the image can be viewed and manipulated. Digital shade information can be transmitted to the laboratory by using one or more of three methods: a printed shade analysis, e-mailed shade analysis, or shade analysis saved to a disk.

There are several factors to consider when choosing a shade-scanning system. The first consideration is expense. The systems have a starting cost between \$3000 and \$6000, and a considerable prosthodontic workload would be required to justify the cost. The second consideration is compatibility with your current porcelain system. Four of the five systems are compatible with a number of porcelain systems while the Vita Easyshade is only compatible with Vident products. The final consideration is the possible learning curve required before the user becomes competent with it.



[To view the synopsis, see tables below.](#) Please be aware that information provided in these tables has been supplied from the manufacturers and has not been verified by DIS evaluation. Each table provides pertinent information for the listed digital shade-scanning systems and should assist in selecting a potential system that meets your needs. Please contact the appropriate manufacturer for additional information not included in the tables.

### Synopsis of Shade-Scanning Units\*

Product	ShadeVision System	Vita Easyshade	ShadeScan
			
<b>Manufacturer and / or Distributor</b>	<b>Manufacturer</b> X-Rite Incorporated 3100 44th St SW Grandville, MI 49418 (616) 534-7663 (866) 61SHADE (616) 534-8960 FAX <a href="http://www.x-rite.com">www.x-rite.com</a>  <b>Distributor</b> Sullivan-Schein Dental 135 Duryea Road Melville, NY 11747 (631) 843-5325 Int'l (800) 851-0400 (631) 390-8171 FAX <a href="http://www.henryschein.com">www.henryschein.com</a>	Vident 3150 East Birch Street Brea, CA 92821 (714) 961-6200 (800) 828-3839 (714) 961-6299 FAX <a href="http://www.vident.com">www.vident.com</a>	Cynovad Inc. 9710 Trans-Canada Highway Montreal, Quebec, Canada (514) 337-1444 (888) 933-2444 (888) 913-9899 US Sales Rep (514) 337-4484 FAX <a href="http://www.cynovad.com">www.cynovad.com</a>
<b>Components Included</b>	Cordless hand-held instrument, docking station for computer upload, software program, 5 disposable tips, training CD-ROM	Hand-held instrument with 6-ft cable, 3-lb control unit, 20 disposable tips, USB & serial ports for expanded use / upgrades	Handheld device with color LCD screen, base station, seven flashcards included (16 MB each), basic software
<b>Type of Scanning Technology</b>	Colorimeter	Spectrophotometer	Colorimeter
<b>Auxiliary Equipment Needed</b>	Computer with: Windows 98 or 2000, Pentium III or equivalent preferred, 128 MB RAM, USB port, CD-ROM drive	None	Computer (optional)
<b>Shade Display Mode(s)</b>	Viewed as shade mapping image on computer	Vita-corresponding shade is displayed on control unit	Hand-held display, shade map
<b>Communication Mode to Lab</b>	E-mailed, saved to disk, or printed	Shade results documented on lab prescription	Flash card, email, and print capability (with optional computer)
<b>Compatible Porcelain Shade Guide Systems</b>	Vita Classic, Vitapan 3D Master, Ivoclar Chromoscop, Noritake, Shofu Vintage Halo, Dentsply Esthetix, Trubyte Bioform	Vitapan 3-D Master, Vita Classic, 3 Bleached Shades	Vita Classic, Vitapan 3-D Master, Ivoclar Chromoscop, Noritake, Shofu, Dentsply Esthetix, Degussa Duceragold
<b>Infection Control Requirements</b>	Disposable tips	Disposable tips	10 reusable guards, can be disinfected between uses
<b>Calibration Requirements</b>	Self-calibrates in docking station before each patient	Self-calibrates by rotating handpiece down while seated in cradle	Self-calibrating
<b>Warranty</b>	1-yr limited warranty 2-yr extended warranty available	1 yr	1-yr parts and labor 45-day money back guarantee
<b>Retail Price</b>	<b>Distributor:</b> ShadeVision & Computer - \$6000.00 Software only - \$1750.99 2-yr extended warranty - \$394.99 <b>Manufacturer:</b> refill item: 100 disposable tips - \$95.00	\$3995.00 Refill item: 100 disposable tips - \$35.00	Basic system - \$5995.00 – includes lab software ShadeScan Plus software - \$1995.00
<b>Government Price</b>	<b>Distributor:</b> ShadeVision & Computer - \$5100.00 Software only - \$1487.58 2-yr extended warranty - \$335.74 Refill item: none	Same as retail	Same as retail

\*The manufacturers provided the data in these tables.

### Synopsis of Shade-Scanning Units\*

<b>Product</b>	<b>ShadeEye-NCC Chroma Meter</b> 	<b>ClearMatch</b> 
<b>Manufacturer and / or Distributor</b>	Shofu Dental Corporation 1225 Stone Dr San Marcos, CA 92069 (760) 736-3277 (800) 893-0833 (760) 736-3276 FAX <a href="http://www.shofu.com">www.shofu.com</a>	Smart Technology 979 Eby Road Hood River, OR 97031 (541) 386-6400 (800) 695-3917 (541) 387-3351 FAX <a href="http://www.smart-technology.net">www.smart-technology.net</a>
<b>Components Included</b>	Computer base station, cordless hand-held instrument, 1 box of 50 disposable tips, 3 contact tip holders, 1 roll of printer paper, 1 calibration cap, 3 Shofu Vintage Halo shade guides, ShadeEye viewer software, PC cable, instructional video	Software program
<b>Type of Scanning Technology</b>	Colorimeter	Digital camera and shade analysis software
<b>Auxiliary Equipment Needed</b>	Computer with Windows (optional)	Digital camera (2 megapixels or higher, macro capability, white balancing, built-in flash), Computer with Windows 98 or higher platform, 64 MB RAM, 1024x768 or higher monitor resolution, color printer
<b>Shade Display Mode(s)</b>	Hand-held instrument display, base station printout of data, computer displayed using ShadeEye viewer software	Computer-displayed shade mapping
<b>Communication Mode to Lab</b>	E-mailed, saved to disk, printed	E-mailed, saved to disk, printed
<b>Compatible Porcelain Shade Guide Systems</b>	Shofu Vintage Halo, Vita Classical, Vitapan 3-D Master, Biodent, Ivoclar Chromoscop	Vita Classical, Vitapan 3-D Master, Chromoscop, others can be added by downloading from website
<b>Infection Control Requirements</b>	Disposable tips	None
<b>Calibration Requirements</b>	Self-calibrating	Normalized (calibrated) with each digital picture by including a shade tab and black-and-white pattern in the picture
<b>Warranty</b>	1-yr limited, 30-day money back guarantee	45-day money back guarantee
<b>Retail Price</b>	ShadeEye NCC System - \$6995.00 Refill items: 50 disposable tips - \$98.50 3 contact tip holders - \$22.95 1 roll printer paper - \$15.95	Software system - \$2995.00
<b>Government Price</b>	ShadeEye NCC System - \$5036.40 Refill items: 50 disposable tips - \$49.47 3 contact tip holders - \$11.47 1 roll printer paper - \$7.97	Same as retail

\*The manufacturers provided the data in these tables.